

Resource efficiency and Circular Economy in the EU and Japan

Overview of the EU Ecodesign and Energy Labelling schemes

Tokyo, 15 February 2016

Policy context

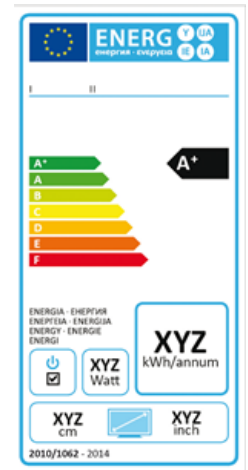
- Europe 2020 Strategy:
 - objectives on employment, innovation, education, social inclusion and climate/energy
 - Flagship Initiative Resource Efficient Europe
- Europe 2020 Targets:
 - Reduce greenhouse gas levels by 20%
 - Increase share of renewables to 20%
 - Reduce energy consumption by 20%

Ecodesign and Energy Labelling regulatory framework

Ecodesign Directive 2009/125/EC is a "Framework" defining the "rules" for setting product-specific **minimum requirements** on energy efficiency and other environmental parameters. Compliant products receive a "CE Mark".



Energy Labelling Directive 2010/30/EU is a "Framework" defining the "rules" for setting product-specific requirements on standard **information** of the consumption of energy and other resources (e.g., water)



Guiding criteria for implementation

- Which products?

- Significant volume of sales and trade, indicatively 200.000 units per year
- Significant environmental impact
- Significant potential for improvement in terms of its environmental impact without entailing excessive costs

- Criteria

- No negative impact on:
 - Functionality
 - Health and safety
 - Affordability
 - Industry's competitiveness
- Not imposing proprietary technology on manufacturers
- No excessive administrative burden for manufacturers

EU Ecodesign Regulations

1275/2008	Standby and off mode electric power consumption
107/2009	Simple set-top boxes
244/2009	Non-directional household lamps (amended by 859/2009/EC)
245/2009	Fluorescent lamps without integrated ballast, high intensity discharge lamps, ballasts and luminaires (amended by 347/2010/EU)
278/2009	External power supplies
640/2009	Electric motors (amended by 4/2014/EU)
641/2009	Circulators (amended by 622/2012/EU)
642/2009	Televisions
643/2009	Household refrigerating appliances
1015/2010	Household washing machines
1016/2010	Household dishwashers
327/2011	Fans
206/2012	Air conditioning and comfort fans
547/2012	Water pumps
932/2012	Household tumble driers
1194/2012	Directional lamps, light emitting diode (LED) lamps and related equipment
617/2013	Computers and servers
666/2013	Vacuum cleaners
801/2013	Networked standby electric power consumption
813/2013	Space heaters
814/2013	Water heaters
66/2014	Domestic cooking appliances
548/2014	Power transformers
1253/2014	Ventilation units
1095/2015	Professional refrigeration
1188/2015	Local space heaters
1189/2015	Solid fuel boilers
1185/2015	Solid fuel local space heaters

EU Energy Labelling Regulations

1059/2010	Household dishwashers
1060/2010	Household refrigerating appliances
1061/2010	Household washing machines
1062/2010	Televisions
626/2011	Air conditioners
392/2012	Household tumble driers
874/2012	Electrical lamps and luminaires
665/2013	Vacuum cleaners
811/2013	Space heaters
812/2013	Water heaters
65/2014	Domestic cooking appliances (ovens and range hoods)
518/2014	Internet energy labelling
1254/2014	Domestic ventilation units
1094/2015	Professional refrigeration
1187/2015	Solid fuel boilers
1186/2015	Local space heaters

+

3 Voluntary Agreements

COM (2012) 684	Complex set top boxes
COM (2013) 23	Imaging equipment
COM (2015) 178	Games consoles

More information at: http://ec.europa.eu/growth/industry/sustainability/ecodesign/index_en.htm

Ongoing work

Measures under development

- Electronic displays (with televisions)
- Small electric motors (with electric motors)
- Air heating products
- Commercial refrigeration
- Compressors
- Uninterruptible power supplies
- Enterprise servers
- Professional washing machines & driers
- Welding equipment

New measures under study

- Windows
- Water-related products
- Smart appliances

Measures under review

- Televisions
- Electric motors
- Household dishwashers
- Household refrigerating appliances
- Household washing machines
- Household tumble driers
- Pumps
- Fans
- External power supplies
- Lighting

Voluntary agreements under development

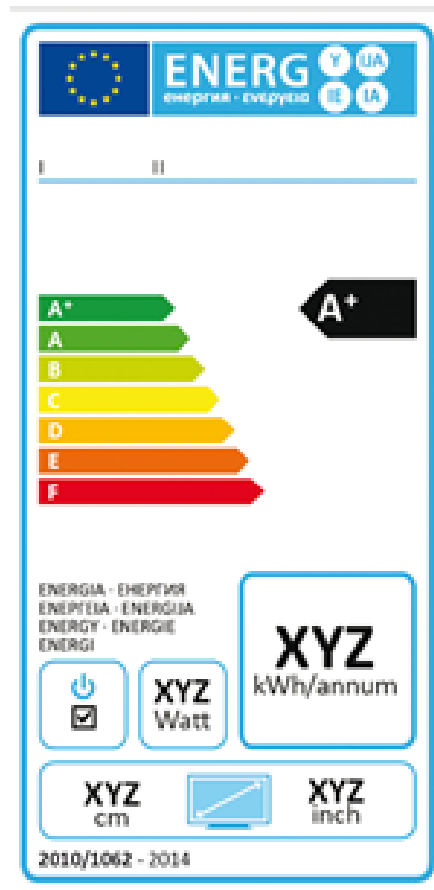
- Machine tools

Environmental requirements in Ecodesign

- Energy performance / Energy efficiency (e.g., motors, transformers, vacuum cleaners, fridges, etc...)
- Standby / network standby
- Water consumption (e.g., washing machines, dishwashers)
- Noise emissions (e.g., vacuum cleaners, air conditioning)
- NOx emissions (e.g., heaters)
- CO emissions (e.g., solid fuel heaters)
- Minimum lifetime of lamps, vacuum cleaners
- Non-recycled mercury and lead in lamps and televisions
- High global warming potential refrigerant content in air conditioners
- Facilitating disassembly (e.g., vacuum cleaners, circulators, electric motors, fans, water pumps, space and water heaters, etc...)

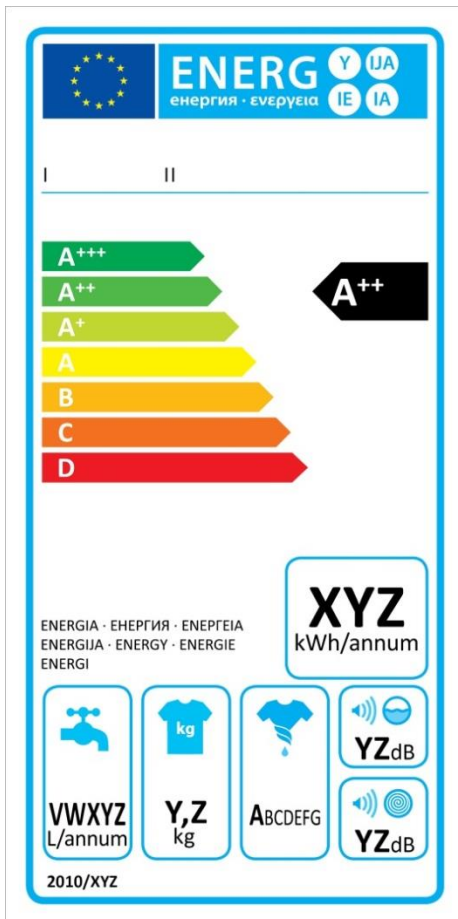
Environmental requirements in Energy Labelling

- Energy efficiency class on a scale from **A+++** to **G** (rescaling to A to G from 2017 pending agreement)
- Standby requirements
- Water efficiency
- Noise level

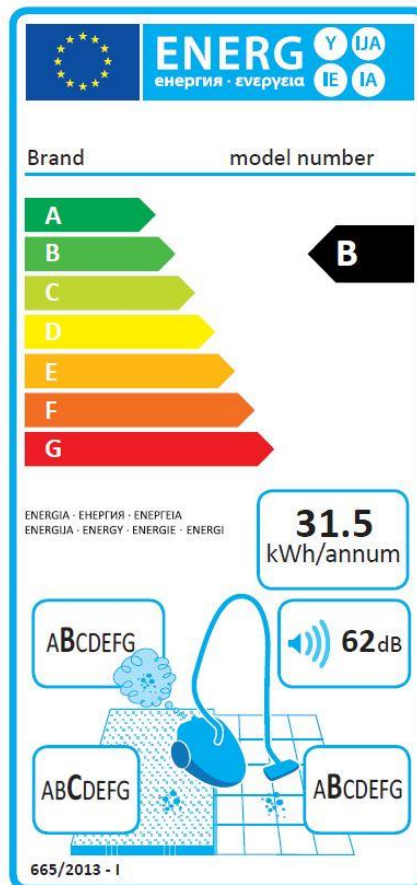


Energy Labelling – examples

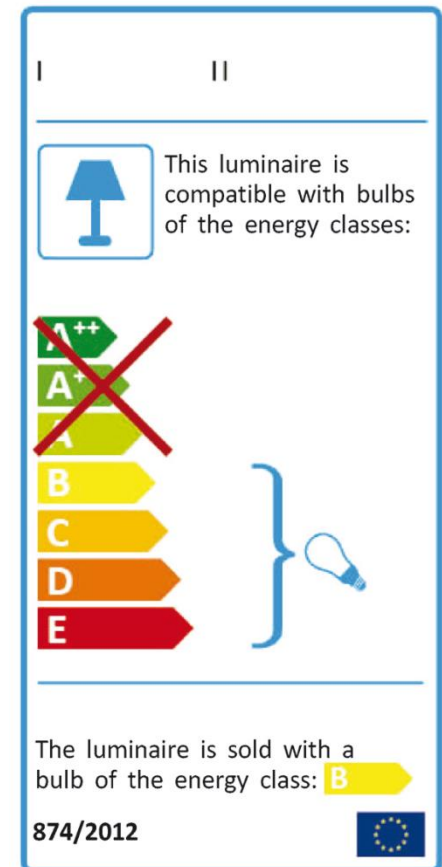
Washing machines



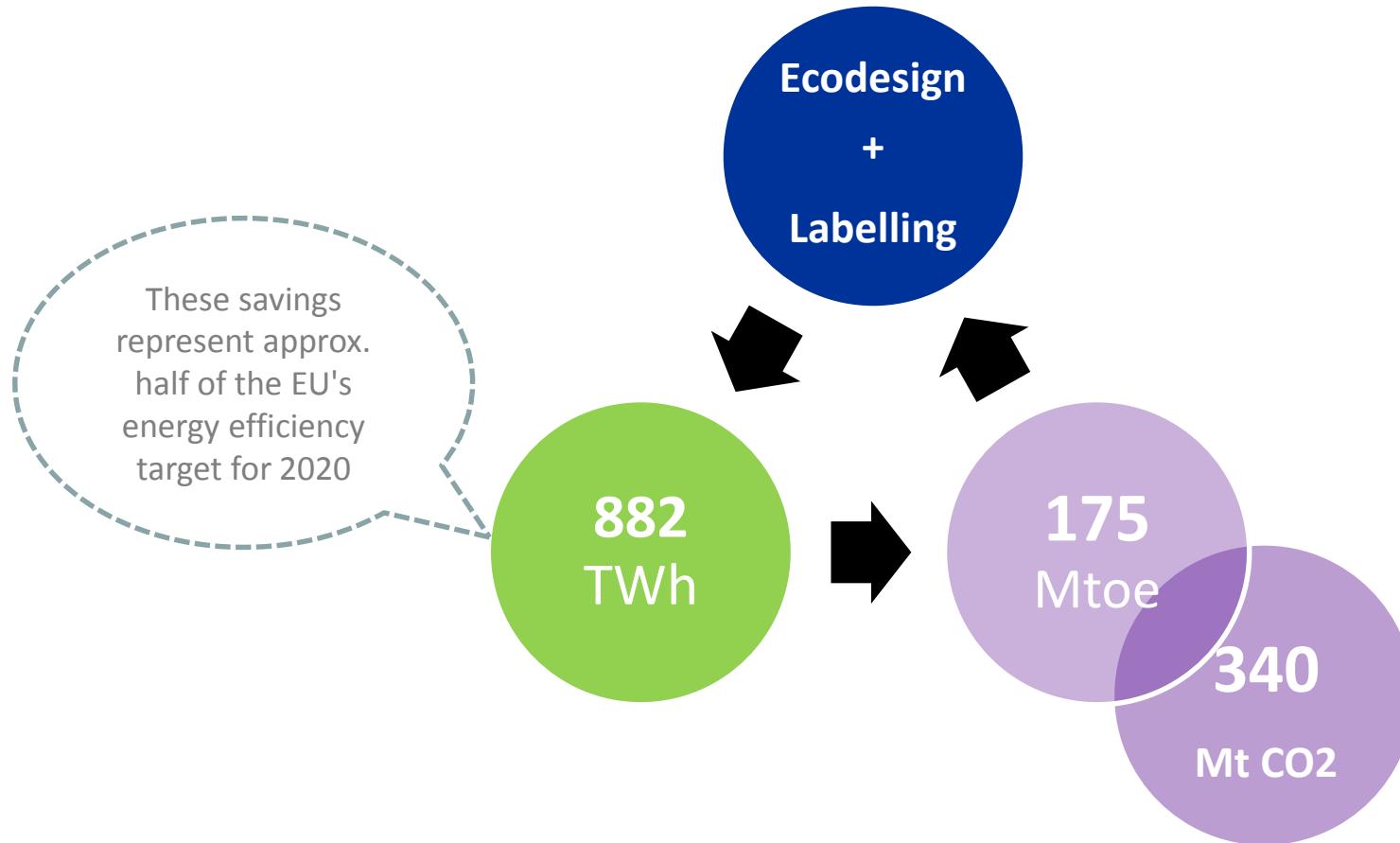
Vacuum cleaners



Luminaires



Expected savings



These estimates do not include rebound effects

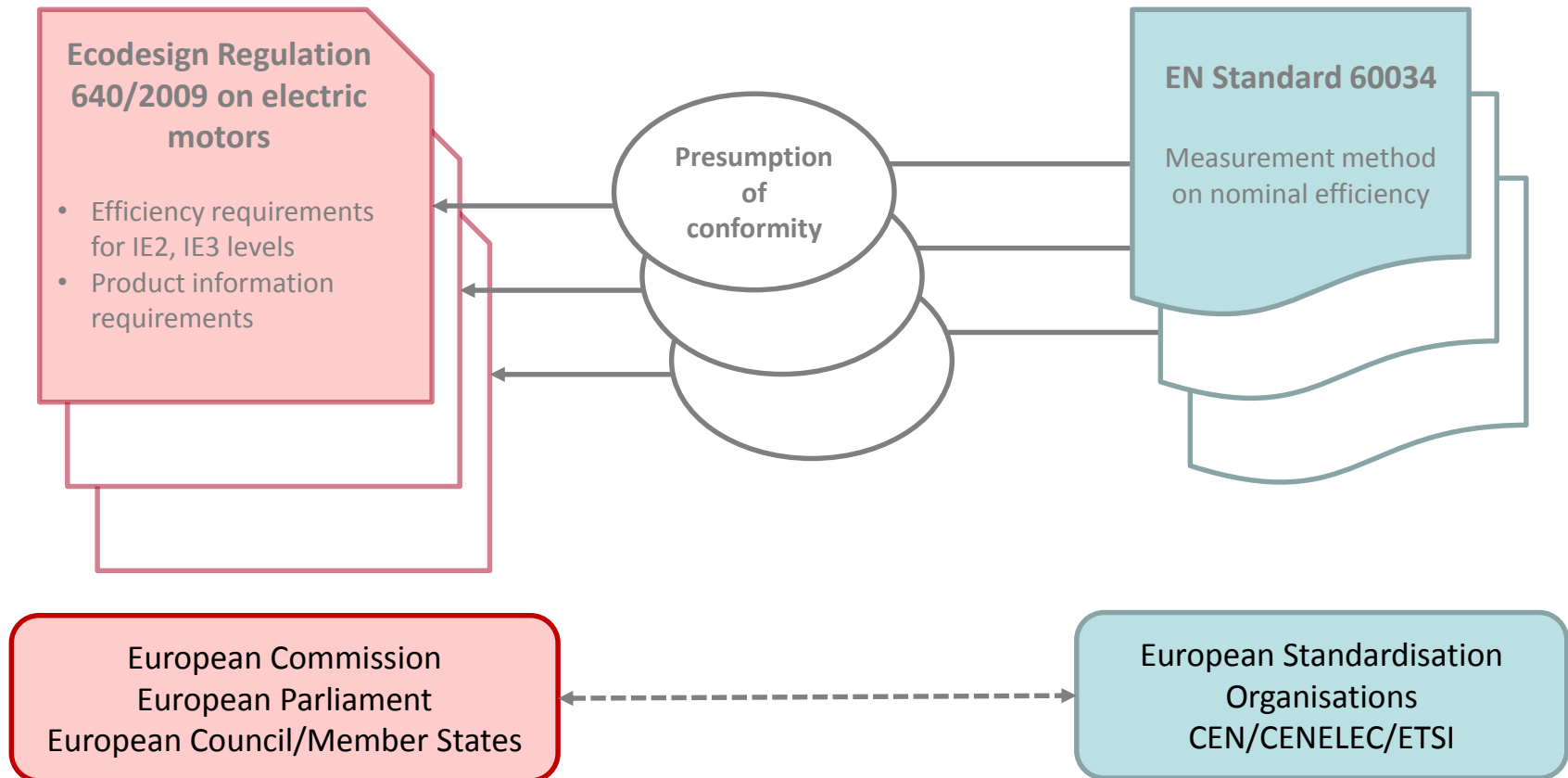
Ecodesign and Energy labelling - Results expected

- 175 Mtoe primary energy savings per year by 2020, more than the annual primary energy consumption of Italy
- 340 Mt CO₂ equivalent less greenhouse gas emissions per year (more than 7% of EU total emissions in 2010)
- Circa €100 billion net saving on consumer expenditure per year, equivalent to €465 per household per year
- € 55 billion extra revenue for industry per year, wholesale and retail sector
- 800.000 extra direct jobs for industry (cumulative), wholesale and retail sector

Source: Impact accounting study

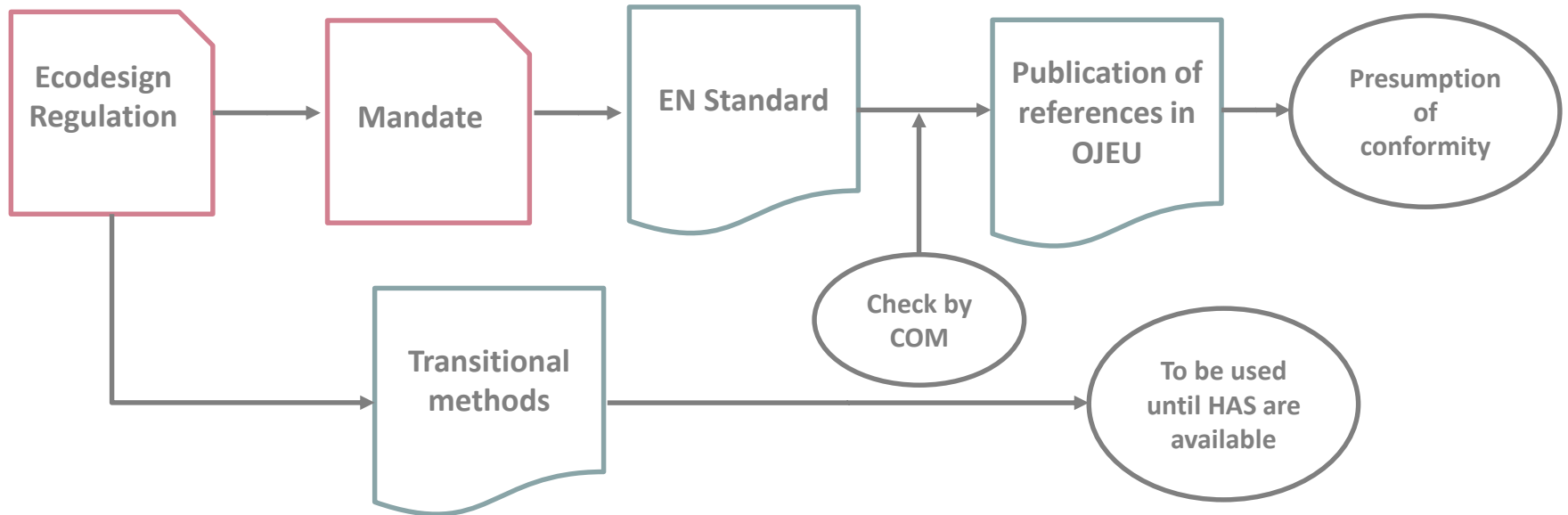
(https://ec.europa.eu/energy/sites/ener/files/documents/2014_06_ecodesign_impact_accounting_part1.pdf)

EN Standards provide presumption of conformity with minimum requirements in the EU



- The use of EN harmonized standards provides presumption of conformity with legal requirements
- Economic operators may use other methods to provide conformity
- Manufacturers' self-declarations may use EN harmonized standards anywhere in the world
- Where possible, EN standards are in line with ISO/IEC international standards

Process of requesting standards



Process of requesting standards

- Mandates are supporting Regulations. They describe the parameters to be covered by the standards, deadlines for making them available to the Commission, etc...
- Mandates can only be addressed to European Standardisation Organisations (CEN / CENELEC / ETSI), they have to be drafted in a transparent process, consulting MS and sectorial associations and are ultimately voted by the Standardisation Committee and adopted by the Commission (Regulation 1025/2012).
- Mandates need to be accepted by ESOs (but may not...)
- Standards are offered for harmonisation to the Commission, that has to decide if they fulfil the requirements of the mandate or not.
- If at the time of coming into force of the requirements HAS are not available, transitional methods are published by the Commission. These are automatically withdrawn when HAS are referenced in the OJEU.

ED/EL Regulation for which EN Harmonised Standards exist

		Ecodesign	Energy Labelling
<u>Air conditioners</u>	Air conditioners and comfort fans	(EU) No 206/2012	EU No 626/2011
<u>Boilers</u>	Hot-water boilers	92/42/EEC	
<u>Circulators</u>	Circulators and glandless circulators integrated in products	(EC) No 641/2009	
<u>Dishwashers</u>	Household dishwashers	(EU) No 1016/2010	(EU) No 1059/2010
<u>Domestic ovens, hobs and range hoods</u>	Domestic ovens, hobs and range hoods	(EU) No 66/2014	(EU) No 65/2014
<u>Electric motors</u>	Electric motors	(EC) No 640/2009	
<u>Fans</u>	Fans driven by motors	(EU) No 327/2011	
<u>Lamps (directional and LED)</u>	Directional lamps, light emitting diode lamps and related equipment	(EU) No 1194/2012	(EU) No 874/2012
<u>Lamps (household)</u>	Non-directional household lamps (including amendment on ultraviolet radiation)	(EC) No 244/2009 (EC) No 859/2009	(EU) No 874/2012
<u>Lamps (fluorescent)</u>	Fluorescent lamps without integrated ballast, for high intensity discharge lamps and for ballasts and luminaries able to operate such lamps (including amendment)	(EC) No 245/2009 (EU) No 347/2010	(EU) No 874/2012
<u>Ovens</u>	Domestic electric ovens		2002/40/EC
<u>Power supplies</u>	External power supplies	(EC) No 278/2009	
<u>Refrigerating appliances</u>	Household refrigerating appliances	(EC) No 643/2009	(EC) No 1060/2010
<u>Set-top boxes</u>	Simple set-top boxes	(EC) No 107/2009	
<u>Standby and off mode</u>	Electric power consumption standby and off mode of electrical and electronic household and office equipment	(EC) No 1275/2008 (EC) No 801/2013	
<u>Television</u>	Television	(EC) No 642/2009 (EC) No 801/2013	(EU) No 1062/2010
<u>Transformers</u>	Small, medium and large power transformers	(EU) No 548/2014	
<u>Tumble driers</u>	Household tumble driers	(EU) No 932/2012	(EU) No 392/2012
<u>Vacuum Cleaners</u>	Vacuum Cleaners	(EU) No 666/2013	(EU) No 665/2013
<u>Washer-driers (combined)</u>	Household combined washer-driers	-	96/60/EC
<u>Washing machines</u>	Household washing machines	(EU) No 1015/2010	(EU) No 1061/2010
<u>Water pumps</u>	Water pumps	(EU) No 547/2012	

Regulatory process



1. Product study completed

A study for each product group examines market data, technological status and other relevant issues.

When the study is completed, the Commission formulates a proposal (working document) taking the findings and recommendations of the study into account.

2. Consultation Forum and first proposal

The proposal (working document) from the Commission is communicated to experts, stakeholders and Member States. These parties meet in the Eco-design Consultation Forum to discuss the proposal.

Based on the Consultation Forum and the impact assessments, the Commission formulates a draft regulation.

3. Draft regulation

When the Commission has formulated a draft regulation, it is submitted to the Eco-design Regulatory Committee, which is composed by one representative from each EU Member State.

4. Approved by Regulatory Committee

After the proposed regulation is adopted by a majority of the Regulatory Committee (the voting power of each Member State is weighted based largely on each state's population) it is sent to the European Parliament for scrutiny. It is also notified to the World Trade Organisation.

5. Final regulation

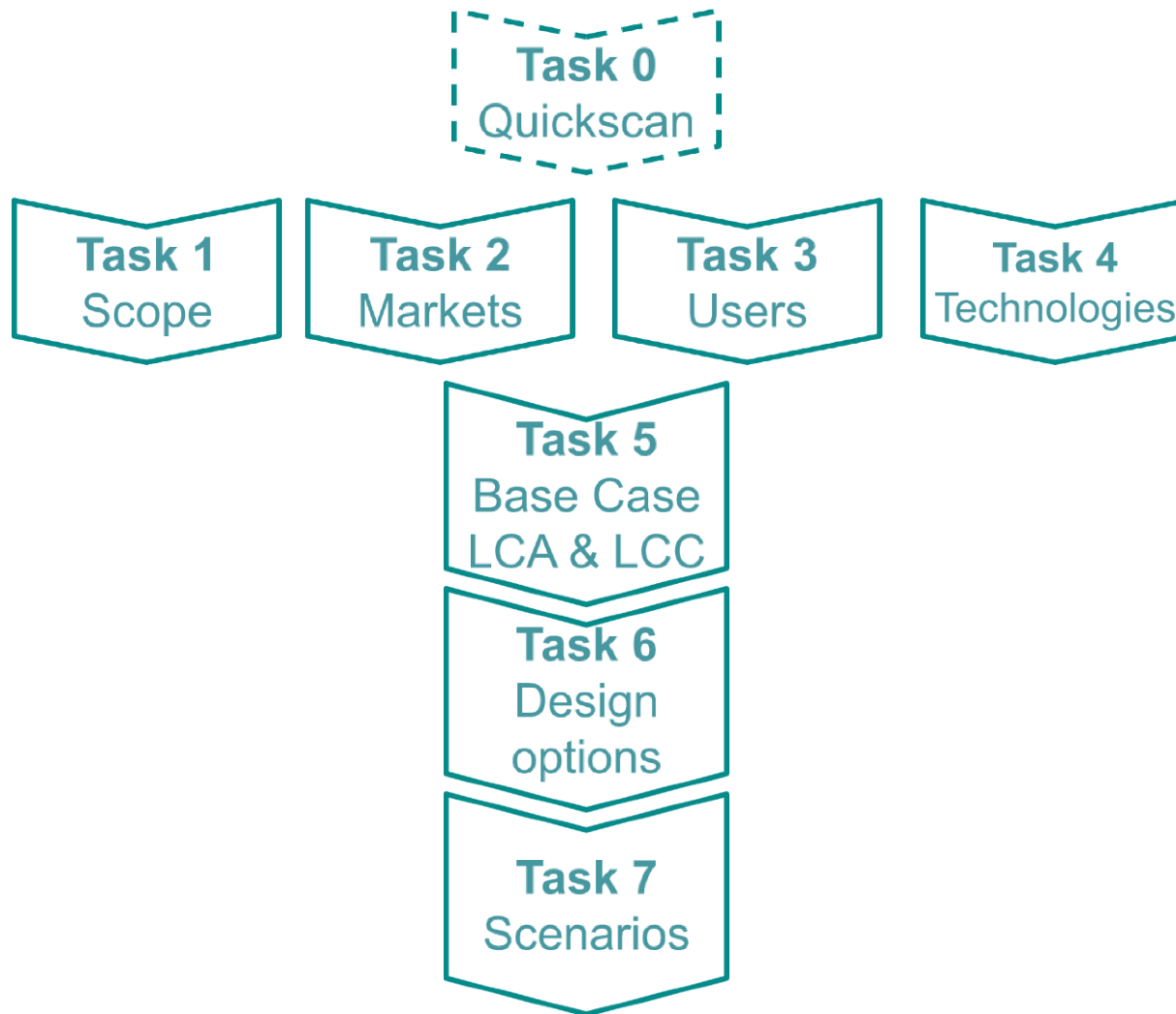
The regulation is formally adopted by the Commission and published in the Official Journal of the European Union (OJ) before it enters into force.

The most likely legal form of the implementation is "regulation", which means that it takes direct legal effect in all Member States.

For more information

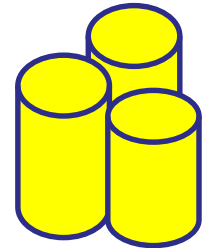
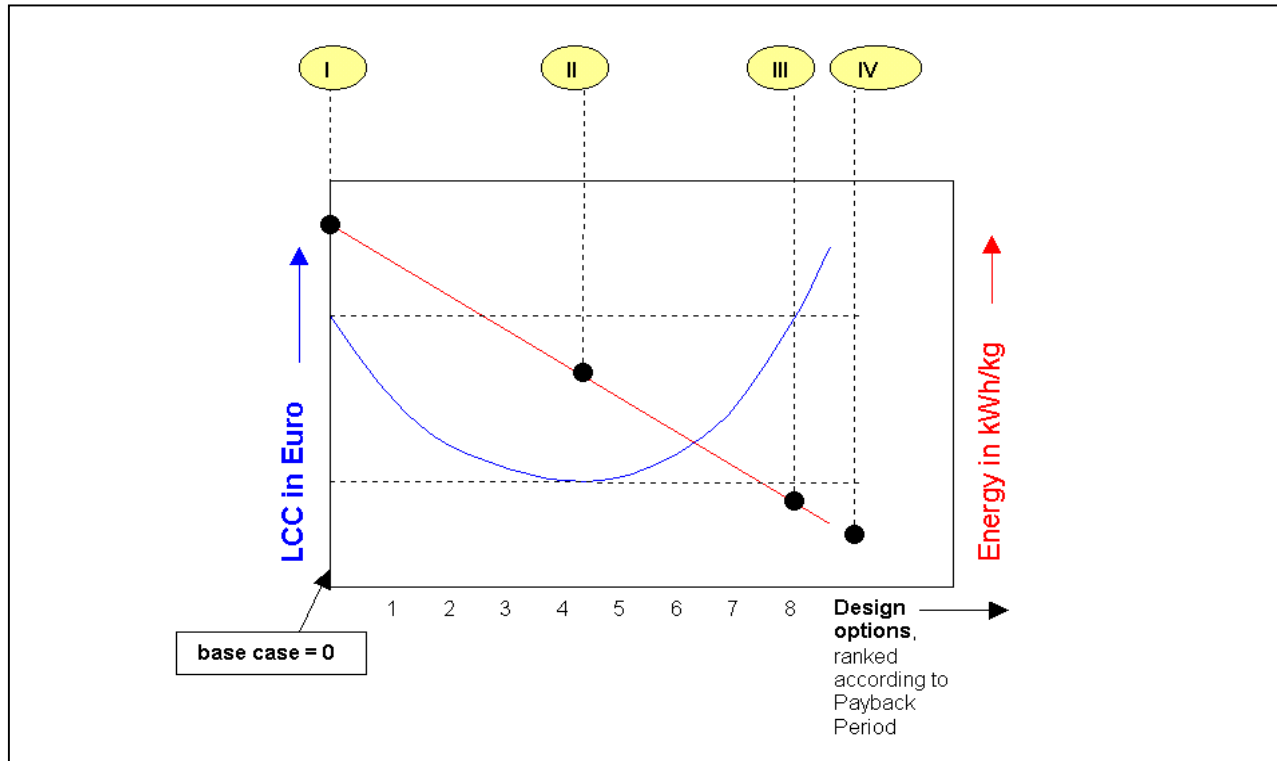
- http://ec.europa.eu/growth/industry/sustainability/ecodesign/index_en.htm
- <http://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficient-products>
- GROW-ECODESIGN@ec.europa.eu

Ecodesign Methodology is a simplified Life Cycle Assessment



Life Cycle Costs curve

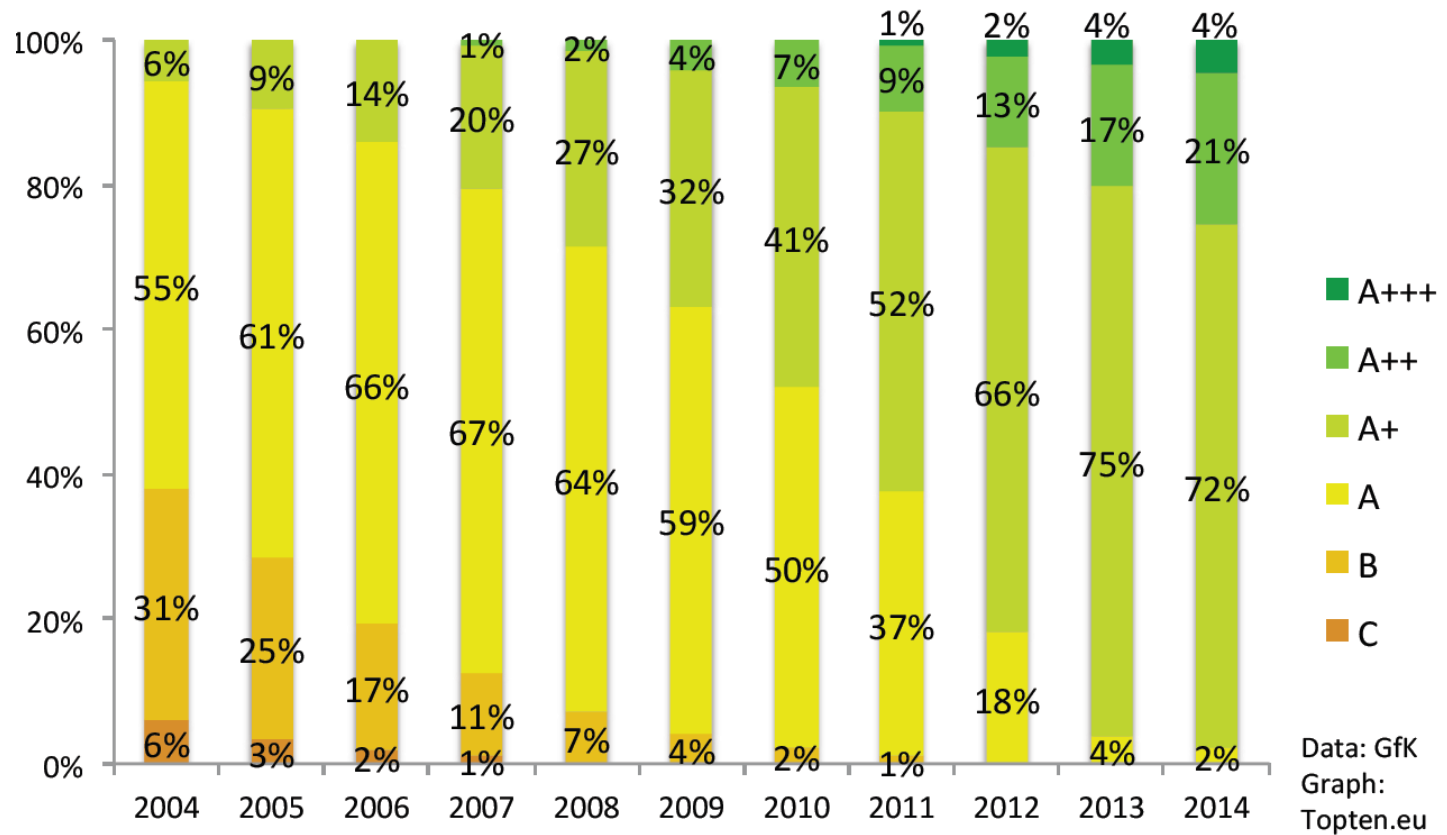
Archetype (example)



I = BaseCase; II = Least LCC; III = No financial loss (break-even point); IV = BAT point

Energy labelling works, but ..

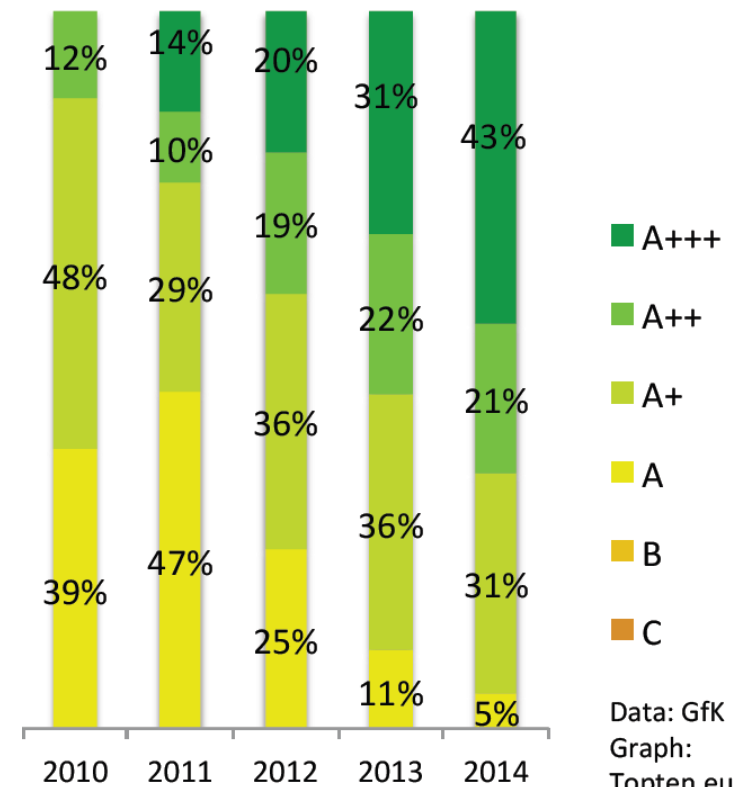
EU: efficiency classes of refrigerator sales



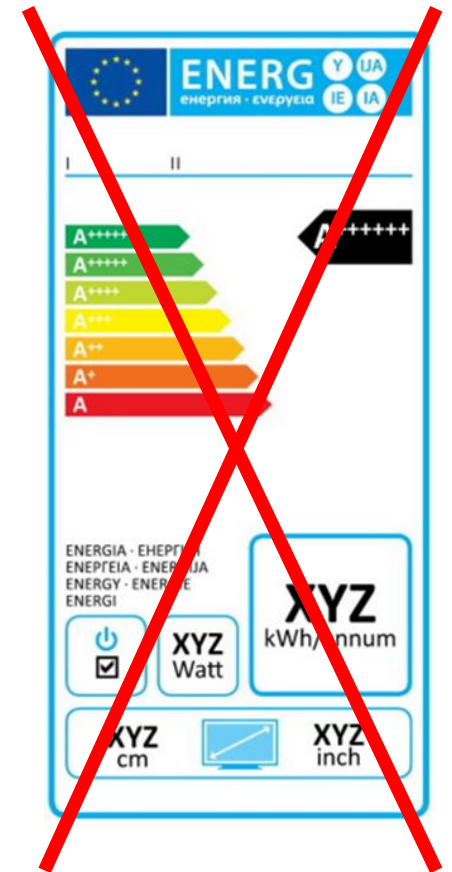
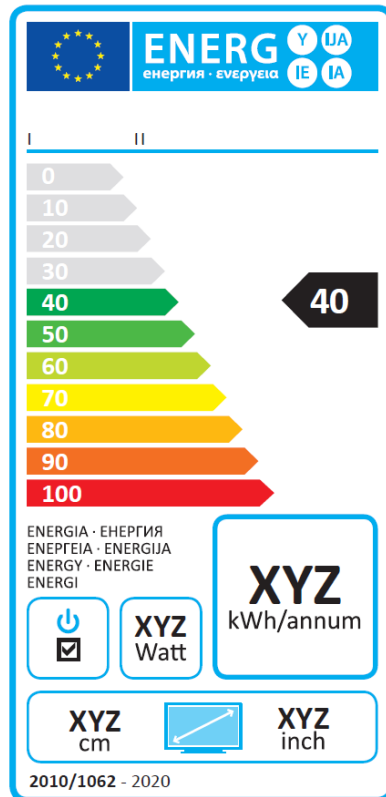
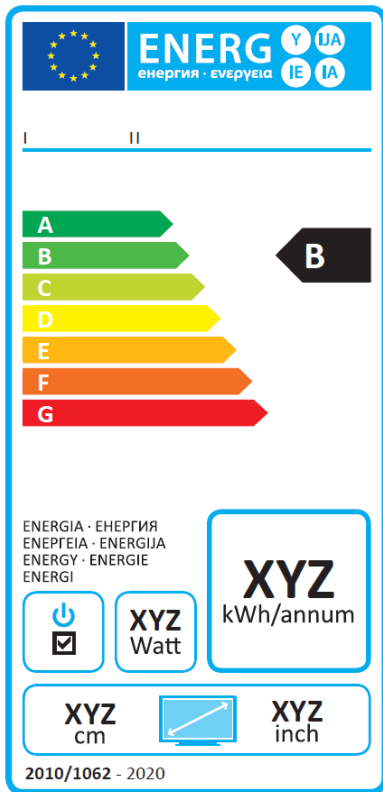
..there are problems in the framework

- Label is "victim" of its own success
 - Top classes 'getting full' ->
 - Reduced effectiveness of '+' classes
 - Consumers do not know that bottom classes are empty
- Non-compliance
 - 10% less energy savings
 - Weak enforcement by Member State authorities having poor access to needed documentation

washing machine sales



Different labels were researched



- No-one wanted to add extra plusses

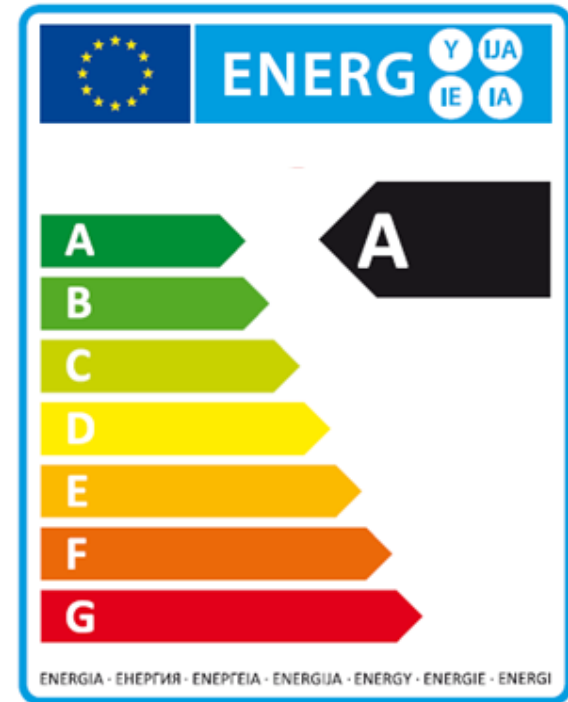
Product registration database

- Suppliers register the label and compliance information (which they already have) in a **digital database**
- **Authorities have direct access** and no longer need to request documents every time
- **Consumers have access to public information**



Next steps in the rescaling process

- **European Parliament and Council discuss proposal**
- Once final, Commission would start work on updating labels for specific products
- Work would start on labels where the market is concentrated in the top classes (e.g. dishwashers and washing machines)



Conclusion and Commission proposal

- Consumer studies show rescaling back to **A to G label** is most effective, long term solution.
- To limit confusion, labels on display in shops will be updated **from old to new in one week**.
- To limit costs, top two classes initially empty so that labels only need to be **updated every 10 years**.

